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EXAMINER

CURCIO, JAMES A F

ART UNIT PAPER NUMBER

2122

DATE MAILED: 09/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/611,145	Applicant(s) SAKO ET AL.	
	Examiner James Curcio	Art Unit 2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-40 of application 09/611145 remain pending.

Response to Arguments

1. Applicant's arguments filed June 4, 2004 have been fully considered but they are not persuasive. Applicant's remarks are directed only to added limitations to independent claims 1, 8, 16, 21, 28, and 36. However, such added limitations have been disclosed in Thompson et al (4716588), as will be applied below. Furthermore, no substantive arguments have been advanced to traverse the rejection of original claims 1-40.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 16, 18-25, 36, and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US005315448A) in view of Thompson et al (4716588).

4. As per claims 1, 16, 21, and 36, Ryan discloses the following:

a detecting step (see "detector", "first detector", "second detector", "anti-copy bits", and "serial copy prevention scheme bits" in abstract),

a generating step (see "analog copy protection signal", "copy protect 'flag'", and "modifies the output standard video signal" in abstract),

an inserting or arraying step (see “copy protect flag” in abstract”; see “detection of the flag . . . results in modification of the played back standard video signal” in column 3, lines 18-26; see “a plurality of ordered pairs of pseudo-sync and positive pulses are added to the video signal vertical blanking interval” in column 4, line 66 to column 5, line 17).

Ryan fails to expressly disclose receiving via satellite a video signal with appended copy management information.

However, Thompson et al discloses this feature (Thompson et al – Fig.1 and associated text; col. 1:12-19; col. 1:65 to col. 4:8; col. 4:60 to col. 5:53; and col. 33:15-23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan by including the reception via satellite of a video signal with appended copy management information as per the teachings of Thompson et al.

One of ordinary skill in the art would have been motivated to do so in order to enable the applicant's invention in a direct broadcast satellite system and to enable pay broadcasts to various subscribers via direct satellite (Thompson et al – col. 33:15-23).

5. As per claims 4-5 and 24-25, Ryan discloses that the protect code signal (the pseudo-sync and AGC pulses) is coded in line 20 and, alternatively, line 21 (see “adding a plurality of pulse pairs to the otherwise unused lines of a video signal vertical

blanking interval" in column 1, lines 16-30). The Office interprets "otherwise unused lines" as including lines 20 and 21.

6. As per claims 19-20 and 39-40, in addition to the teachings applied above, Ryan discloses that the trigger bits are encoded in the vertical blanking interval of the video signal at line 20 of field 1 and line 20 of field 2 and, alternatively, that the trigger bits are encoded as bits 9 and 10 of word 2 in a 20 bit digital signal (See "such SCPS bit(s) may be located for instance in the equivalent of the unused lines in the vertical blanking interval" in column 7, lines 34-54). The Office interprets that the "equivalent of the unused lines in the vertical blanking interval" include the location limitations specified in claims 19-20 and 39-40.

7. As per claims 18 and 38, Ryan discloses that the trigger bits are only operable when copyright subsists in the video signal (see "discourage unauthorized recording" and "copyright infringement" in column 2, line 48 to column 3, line 7 and see "if it determines . . . that one of these bit(s) . . . is high, the . . . recorder will make a recording" and "the intention is to limit the serial copies" in column 7, lines 11-33).

8. As per claims 2-3 and 22-23, as per the teachings applied above, Ryan (US005315448A) discloses detecting, generating, and arraying steps. Ryan's first embodiment fails to expressly disclose that the protect code signal includes two bits of information indicative of three distinctly significant copy permission states. However, an

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alternative embodiment in Ryan discloses these features (see SCMS bits in column 7, lines 11-33). One SCMS bit represents the permission to copy or lack thereof. If a copy is made and there is a generation limitation, a second SCMS bit is added preventing later reproduction. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first embodiment of Ryan by including the two SCMS bits as per the teachings of Ryan's alternative embodiment. One of ordinary skill in the art would have been motivated to do so in order to impose a limit on the number of times a digital signal can be reproduced (column 7, lines 11-33).

9. As per claims 19-20 and 39-40, in addition to the teachings applied above, Ryan discloses that the trigger bits are encoded in "the equivalent of the unused lines of the vertical blanking interval" (see quote in column 7, lines 34-54), which the Office interprets to include the limitations of 19-20 and 39-40: that the trigger bits are encoded in the vertical blanking interval of the video signal at line 20 of field 1 and line 20 of field 2 and, alternatively, that the trigger bits are encoded as bits 9 and 10 of word 2 in a 20 bit digital signal. Furthermore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to encode the trigger bits in the specific locations recited in claims 19-20 and 39-40. Applicant has not disclosed that encoding the trigger bits in the specific locations recited in claims 19-20 and 39-40 provides an advantage, is used for a particular purpose, or solves a stated problem. Therefore, one of ordinary skill in the art would have expected Applicant's invention to perform equally well in any of "equivalent of the unused lines of the vertical blanking interval" because

the functionality of trigger bits is still present and invisible to the viewer of the video signal regardless of the bits' location(s) in the vertical blanking interval.

Therefore, it would have been obvious to one of ordinary skill in this art to modify Ryan (US005315448A) to obtain the invention as specified in claims 19-20 and 39-40.

10. Claims 4-5 and 24-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US005315448A) in view of Thompson et al (4716588) as applied to claims 1, 16, 21, and 36 above, and further in view of Quan et al (US005157510A). As per the teachings applied above, Ryan discloses detecting, generating, and arraying steps, which incorporate a video signal, vertical blanking interval, and a protect code signal. Ryan does not explicitly disclose that the protect code signal is encoded at line 20 and, in the alternative, line 21 of a field in the vertical blanking interval. However, Quan et al, another invention involving the copy protection of video signals, discloses these features (see "pulse V, that extends from about lines ten through twenty of the horizontal scan, i.e., represents the vertical blanking interval," in Quan et al – column 5, lines 5-8 and lines 61-63). The Office interprets the words "about lines ten through twenty" to include line 21). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan by encoding the protect code signal into line 20 and, in the alternative, line 21 of a field in the vertical blanking interval as per the teachings of Quan et al. One of ordinary skill in the art would have been motivated to do so in order to prevent "both analog and digital copying" (Ryan – abstract and column 1, lines 16-30).

11. Claims 6-7 and 26-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US005315448A) in view of Thompson et al (4716588) as applied to claims 1-3, 16, 21-23, and 36 above, and further in view of Buynak et al (US005394470A).

12. As per claims 6-7 and 26-27, as per the teachings applied above, Ryan discloses a protect code signal, included in line 20 and, in the alternative, line 21 of the vertical blanking interval, that includes two bits of information identifying various copy permission states. Ryan fails to expressly disclose that a logical "1" of the protect code signal is represented by a level of about 50-IRE and, in the alternative, about 70-IRE and a logical "0" of the protect code signal is represented by a level of about 0-IRE. However, Buynak et al, another invention that protects a video signal from reproduction, discloses these features (In Buynak et al, see "first augmenting pulse at -120 IRE units" and "second augmenting pulse at +40 IRE units" in column 5, lines 57-68 and see "first pseudo-sync pulse . . . extending down to . . . an amplitude of approximately -40 IRE units" and "second pseudo-sync pulse . . . approximately equal to the peak white signal level of 100 IRE units" in column 10, lines 37-53.) The Office interprets the words "about 0-IRE" to be a range of IRE measurements including -120 IRE and -40 IRE. The Office also interprets the words "about 50-IRE" and "about 70-IRE" to be a range of IRE measurements including +40 IRE and +100 IRE. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan as per the teachings of Buynak et al by representing the protect code signal's

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logical "0" or negative pulse by a level of about 0 IRE and logical "1" or positive pulse by a level of about 50-IRE and, in the alternative, 70-IRE. One of ordinary skill in the art would have been motivated to do so in order to "prevent a copy of the thus modified video signal from being satisfactorily displayed" (Buynak et al - abstract) and to prevent "both analog and digital copying" (Ryan - abstract).

13. Claims 8, 11, 28, and 31 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan A (US005315448A) in view of Thompson et al (4716588) as applied to claims 1, 16, 21, and 36 above, and further in view of Ryan B (4631603).

14. As per claims 8 and 28, as discussed in the rejections of 1, 16, 21, and 36 above, Ryan A (US005315448A) in view of Thompson et al (4716588) discloses the following:

a receiving step (Thompson et al - Fig.1 and associated text; col. 1:12-19; col. 1:65 to col. 4:8; col. 4:60 to col. 5:53; and col. 33:15-23),

a detecting step (see "detector", "first detector", "second detector", "anti-copy bits", and "serial copy prevention scheme bits" in Ryan A - abstract),

a generating step (see "analog copy protection signal", "copy protect 'flag'", and "modifies the output standard video signal" in Ryan A - abstract),

an inserting or arraying step (Ryan A - see "copy protect flag" in abstract"; see "detection of the flag . . . results in modification of the played back standard video signal" in column 3, lines 18-26; see "a plurality of ordered pairs of pseudo-sync and

positive pulses are added to the video signal vertical blanking interval" in column 4, line 66 to column 5, line 17).

Ryan A fails to expressly disclose that the pseudo-sync pulse and video sync pulse have approximately the same amplitude. However, Ryan B, an invention incorporated by reference into Ryan A that also protects video signals from being reproduced, discloses this feature (Ryan B - claim 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan A such that the pseudo-sync pulse and video sync pulses have approximately the same amplitude as per the teachings of Ryan B. One of ordinary skill in the art would have been motivated to do so in order to prevent the generation of usable copies of analog and digital signals (Ryan A - abstract) and television signals (Ryan B - abstract).

15. As per claims 11 and 31, in addition to the teachings applied above, Ryan A also discloses that the pseudo-sync and AGC pulses are inserted on lines 1 to 17 and 273 to 280 of the vertical blanking interval (see "adding a plurality of pulse pairs to the otherwise unused lines of a video signal vertical blanking interval" in column 1, lines 16-30). The Office interprets "otherwise unused lines" as including lines 1 to 17 and 273 to 280.

16. Claims 9-10, 12, 29-30, and 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan A (US005315448A) in view of Thompson et al (4716588) and

Ryan B (4631603) as applied to claims 8 and 28 above, and further in view of Ryan C (4907093).

17. As per claims 9, 12, 29, and 32, as per the teachings applied above, Ryan A discloses AGC pulses. Ryan A fails to disclose that the AGC pulses have a duration of approximately 3.0 microseconds and that the pseudo-sync pulses have a duration of approximately 2.2 microseconds. However, Ryan C, another invention for preventing the copying of a video signal that incorporates Ryan B, discloses these features as aspects of Ryan B (see "white pulses have a duration of about four microseconds" and "pseudo-sync pulses . . . have a duration of about two microseconds" Ryan C – column 2, lines 56-63). The Office interprets the words "approximately 3.0 microseconds" as being a range that includes "about four microseconds." The Office also interprets the words "approximately 2.2 microseconds" as being a range that includes "about 2 microseconds." Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan A by making the duration of the AGC pulses approximately 3.0 microseconds and making the duration of the pseudo-sync pulses approximately 2.2 microseconds as per the teachings of Ryan C. One of ordinary skill in the art would have been motivated to do so in order to prevent the copying of a video signal (Ryan A – abstract and Ryan C – abstract).

18. As per claims 10 and 30, as per the teachings applied above, Ryan A discloses a video signal and AGC pulses. Ryan A fails to expressly disclose that the video signal

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exhibits a peak white amplitude and that the amplitude of the AGC pulses is approximately slightly greater than the peak white amplitude. However, Ryan C, another invention for preventing the copying of a video signal that incorporates Ryan B, discloses these features as being aspects of Ryan B (see "modified video signal having . . . white pulses" and "white pulses, so named because they typically reach peak white level or beyond" in Ryan C – column 2, lines 50-63). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan A by modifying the video signal with AGC pulses that have an amplitude approximately slightly greater than the peak white amplitude as per the teachings of Ryan C. One of ordinary skill in the art would have been motivated to do so in order to prevent the copying of a video signal (Ryan A – abstract and Ryan C – abstract).

19. Claims 13-15 and 33-35 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan A (US005315448A) in view of Thompson et al (4716588) and Ryan B (4631603) as applied to claims 8 and 28 above, and further in view of Kori (US005883959A).

20. As per claims 13 and 33, in the teachings applied above, Ryan A discloses a video signal. Ryan A fails to disclose that the video signal includes color burst signals of a particular phase and that the phase of at least a portion of selected color burst signals is modified. However, Kori, another invention that protects video signals from unauthorized reproduction, discloses these features (see "modified color burst signal

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using phase inversion . . . should be generated” in Kori – column 13, line 62 to column 14, line 14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan A by including color burst signals of a particular phase in the vertical blanking interval in the same lines as the pseudo-sync pulses and AGC pulses exist and the modification of the phase of at least a portion of the selected color burst signals as per the teachings of Kori. One of ordinary skill in the art would have been motivated to do so in order to inhibit the copying of video signals (Ryan A – abstract and Kori – abstract).

21. As per claims 14-15 and 34-35, in the teachings applied above, Ryan A in view of Ryan B and Kori discloses the steps of arraying pseudo-sync pulses and AGC pulses and modifying the phase of at least a portion of selected color burst signals of the video signal. Ryan A in view of Ryan B and Kori performs these steps in the two following alternative manners provided in the limitations of claims 14 and 34 and claims 15 and 35 respectively:

a. for two successive lines of every 17 lines of the vertical blanking interval beginning at line 30 in field 1 and at line 301 in field 2.

b. for four successive lines of every 21 lines of the vertical blanking interval beginning at line 24 in field 1 and at line 297 in field 2.

Ryan A's disclosure that the pseudo-sync pulses and AGC pulses are placed in “the otherwise unused lines of a video signal vertical blanking interval” (Ryan A - column 1, lines 16-30) and the modification of Ryan A in view of Ryan B and Kori described in

the rejection of claims 8, 13, 28, and 33 that places the color burst signals in this same region encompasses the performance of the arraying and modifying steps in the manners taught in a and b.

22. Claims 17 and 37 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan A (US005315448A) in view of Thompson et al (4716588) as applied to claims 16 and 36 above, and further in view of Kori (US005883959A). As per the teachings applied above, Ryan A discloses a video signal. Ryan A fails to disclose that the video signal includes color burst signals of a particular phase and that the phase of at least a portion of selected color burst signals is modified when trigger bits indicate that modification should occur. However, Kori, another invention that protects video signals from unauthorized reproduction, discloses these features (see "trigger bits '11' mean that . . . modified color burst signal using phase inversion . . . should be generated" in Kori – column 13, line 62 to column 14, line 14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan A by including color burst signals of a particular phase in the video signal and the modification of the phase of at least a portion of the selected color burst signals when trigger bits indicate this modification as per the teachings of Kori. One of ordinary skill in the art would have been motivated to do so in order to inhibit the copying of video signals (Ryan A – abstract and Kori – abstract).

Rejections from Previous Office Action

Original Claim Rejections - 35 USC § 102

23. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

24. Claims 1, 4-5, 16, 18, 19-21, 24-25, 36, and 38-40 rejected under 35 U.S.C. 102(b) as being anticipated by Ryan (US005315448A).

25. As per claims 1, 16, 21, and 36, Ryan discloses the following:

a detecting step (see “detector”, “first detector”, “second detector”, “anti-copy bits”, and “serial copy prevention scheme bits” in abstract),

a generating step (see “analog copy protection signal”, “copy protect ‘flag’”, and “modifies the output standard video signal” in abstract),

an inserting or arraying step (see “copy protect flag” in abstract”; see “detection of the flag . . . results in modification of the played back standard video signal” in column 3, lines 18-26; see “a plurality of ordered pairs of pseudo-sync and positive pulses are added to the video signal vertical blanking interval” in column 4, line 66 to column 5, line 17).

26. As per claims 4-5 and 24-25, Ryan discloses that the protect code signal (the pseudo-sync and AGC pulses) is coded in line 20 and, alternatively, line 21 (see

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“adding a plurality of pulse pairs to the otherwise unused lines of a video signal vertical blanking interval” in column 1, lines 16-30). The Office interprets “otherwise unused lines” as including lines 20 and 21.

27. As per claims 19-20 and 39-40, in addition to the teachings applied above, Ryan discloses that the trigger bits are encoded in the vertical blanking interval of the video signal at line 20 of field 1 and line 20 of field 2 and, alternatively, that the trigger bits are encoded as bits 9 and 10 of word 2 in a 20 bit digital signal (See “such SCPS bit(s) may be located for instance in the equivalent of the unused lines in the vertical blanking interval” in column 7, lines 34-54). The Office interprets that the “equivalent of the unused lines in the vertical blanking interval” include the location limitations specified in claims 19-20 and 39-40.

28. As per claims 18 and 38, Ryan discloses that the trigger bits are only operable when copyright subsists in the video signal (see “discourage unauthorized recording” and “copyright infringement” in column 2, line 48 to column 3, line 7 and see “if it determines . . . that one of these bit(s) . . . is high, the . . . recorder will make a recording” and “the intention is to limit the serial copies” in column 7, lines 11-33).

Original Claim Rejections - 35 USC § 103

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

30. Claims 2-3, 19-20, 22-23, and 39-40 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US005315448A) as applied to claims 1, 16, 21, and 36 above.

31. As per claims 2-3 and 22-23, as per the teachings applied above, Ryan (US005315448A) discloses detecting, generating, and arraying steps. Ryan's first embodiment fails to expressly disclose that the protect code signal includes two bits of information indicative of three distinctly significant copy permission states. However, an alternative embodiment in Ryan discloses these features (see SCMS bits in column 7, lines 11-33). One SCMS bit represents the permission to copy or lack thereof. If a copy is made and there is a generation limitation, a second SCMS bit is added preventing later reproduction. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first embodiment of Ryan by including the two SCMS bits as per the teachings of Ryan's alternative embodiment. One of ordinary skill in the art would have been motivated to do so in order to impose a limit on the number of times a digital signal can be reproduced (column 7, lines 11-33).

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32. As per claims 19-20 and 39-40, in addition to the teachings applied above, Ryan discloses that the trigger bits are encoded in "the equivalent of the unused lines of the vertical blanking interval" (see quote in column 7, lines 34-54), which the Office interprets to include the limitations of 19-20 and 39-40: that the trigger bits are encoded in the vertical blanking interval of the video signal at line 20 of field 1 and line 20 of field 2 and, alternatively, that the trigger bits are encoded as bits 9 and 10 of word 2 in a 20 bit digital signal. Furthermore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to encode the trigger bits in the specific locations recited in claims 19-20 and 39-40. Applicant has not disclosed that encoding the trigger bits in the specific locations recited in claims 19-20 and 39-40 provides an advantage, is used for a particular purpose, or solves a stated problem. Therefore, one of ordinary skill in the art would have expected Applicant's invention to perform equally well in any of "equivalent of the unused lines of the vertical blanking interval" because the functionality of trigger bits is still present and invisible to the viewer of the video signal regardless of the bits' location(s) in the vertical blanking interval.

Therefore, it would have been obvious to one of ordinary skill in this art to modify Ryan (US005315448A) to obtain the invention as specified in claims 19-20 and 39-40.

33. Claims 4-5 and 24-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US005315448A) as applied to claims 1, 16, 21, and 36 above, and further in view of Quan et al (US005157510A). As per the teachings applied above, Ryan discloses detecting, generating, and arraying steps, which incorporate a video signal,

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vertical blanking interval, and a protect code signal. Ryan does not explicitly disclose that the protect code signal is encoded at line 20 and, in the alternative, line 21 of a field in the vertical blanking interval. However, Quan et al, another invention involving the copy protection of video signals, discloses these features (see “pulse V, that extends from about lines ten through twenty of the horizontal scan, i.e., represents the vertical blanking interval,” in Quan et al – column 5, lines 5-8 and lines 61-63). The Office interprets the words “about lines ten through twenty” to include line 21). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan by encoding the protect code signal into line 20 and, in the alternative, line 21 of a field in the vertical blanking interval as per the teachings of Quan et al. One of ordinary skill in the art would have been motivated to do so in order to prevent “both analog and digital copying” (Ryan – abstract and column 1, lines 16-30).

34. Claims 6-7 and 26-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US005315448A) as applied to claims 1-3, 16, 21-23, and 36 above, and further in view of Buynak et al (US005394470A).

35. As per claims 6-7 and 26-27, as per the teachings applied above, Ryan discloses a protect code signal, included in line 20 and, in the alternative, line 21 of the vertical blanking interval, that includes two bits of information identifying various copy permission states. Ryan fails to expressly disclose that a logical “1” of the protect code signal is represented by a level of about 50-IRE and, in the alternative, about 70-IRE

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and a logical "0" of the protect code signal is represented by a level of about 0-IRE.

However, Buynak et al, another invention that protects a video signal from reproduction, discloses these features (In Buynak et al, see "first augmenting pulse at -120 IRE units" and "second augmenting pulse at +40 IRE units" in column 5, lines 57-68 and see "first pseudo-sync pulse . . . extending down to . . . an amplitude of approximately -40 IRE units" and "second pseudo-sync pulse . . . approximately equal to the peak white signal level of 100 IRE units" in column 10, lines 37-53.) The Office interprets the words "about 0-IRE" to be a range of IRE measurements including -120 IRE and -40 IRE.

The Office also interprets the words "about 50-IRE" and "about 70-IRE" to be a range of IRE measurements including +40 IRE and +100 IRE. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan as per the teachings of Buynak et al by representing the protect code signal's logical "0" or negative pulse by a level of about 0 IRE and logical "1" or positive pulse by a level of about 50-IRE and, in the alternative, 70-IRE. One of ordinary skill in the art would have been motivated to do so in order to "prevent a copy of the thus modified video signal from being satisfactorily displayed" (Buynak et al – abstract) and to prevent "both analog and digital copying" (Ryan – abstract).

36. Claims 8, 11, 28, and 31 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan A (US005315448A) as applied to claims 1, 16, 21, and 36 above, and further in view of Ryan B (4631603).

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37. As per claims 8 and 28, Ryan A (US005315448A) discloses the following:

a detecting step (see “detector”, “first detector”, “second detector”, “anti-copy bits”, and “serial copy prevention scheme bits” in Ryan A - abstract),

a generating step (see “analog copy protection signal”, “copy protect ‘flag’”, and “modifies the output standard video signal” in Ryan A - abstract),

an inserting or arraying step (Ryan A - see “copy protect flag” in abstract”; see “detection of the flag . . . results in modification of the played back standard video signal” in column 3, lines 18-26; see “a plurality of ordered pairs of pseudo-sync and positive pulses are added to the video signal vertical blanking interval” in column 4, line 66 to column 5, line 17).

Ryan A fails to disclose that the pseudo-sync pulse and video sync pulse have approximately the same amplitude. However, Ryan B, an invention incorporated by reference into Ryan A that also protects video signals from being reproduced, discloses this feature (Ryan B - claim 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan A such that the pseudo-sync pulse and video sync pulses have approximately the same amplitude as per the teachings of Ryan B. One of ordinary skill in the art would have been motivated to do so in order to prevent the generation of usable copies of analog and digital signals (Ryan A - abstract) and television signals (Ryan B - abstract).

38. As per claims 11 and 31, in addition to the teachings applied above, Ryan A also discloses that the pseudo-sync and AGC pulses are inserted on lines 1 to 17 and 273 to

280 of the vertical blanking interval (see "adding a plurality of pulse pairs to the otherwise unused lines of a video signal vertical blanking interval" in column 1, lines 16-30). The Office interprets "otherwise unused lines" as including lines 1 to 17 and 273 to 280.

39. Claims 9-10, 12, 29-30, and 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan A (US005315448A) in view of Ryan B (4631603) as applied to claims 8 and 28 above, and further in view of Ryan C (4907093).

40. As per claims 9, 12, 29, and 32, as per the teachings applied above, Ryan A discloses AGC pulses. Ryan A fails to disclose that the AGC pulses have a duration of approximately 3.0 microseconds and that the pseudo-sync pulses have a duration of approximately 2.2 microseconds. However, Ryan C, another invention for preventing the copying of a video signal that incorporates Ryan B, discloses these features as aspects of Ryan B (see "white pulses have a duration of about four microseconds" and "pseudo-sync pulses . . . have a duration of about two microseconds" Ryan C – column 2, lines 56-63). The Office interprets the words "approximately 3.0 microseconds" as being a range that includes "about four microseconds." The Office also interprets the words "approximately 2.2 microseconds" as being a range that includes "about 2 microseconds." Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan A by making the duration of the AGC pulses approximately 3.0 microseconds and making the duration of the pseudo-sync

pulses approximately 2.2 microseconds as per the teachings of Ryan C. One of ordinary skill in the art would have been motivated to do so in order to prevent the copying of a video signal (Ryan A – abstract and Ryan C – abstract).

41. As per claims 10 and 30, as per the teachings applied above, Ryan A discloses a video signal and AGC pulses. Ryan A fails to expressly disclose that the video signal exhibits a peak white amplitude and that the amplitude of the AGC pulses is approximately slightly greater than the peak white amplitude. However, Ryan C, another invention for preventing the copying of a video signal that incorporates Ryan B, discloses these features as being aspects of Ryan B (see “modified video signal having . . . white pulses” and “white pulses, so named because they typically reach peak white level or beyond” in Ryan C – column 2, lines 50-63). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan A by modifying the video signal with AGC pulses that have an amplitude approximately slightly greater than the peak white amplitude as per the teachings of Ryan C. One of ordinary skill in the art would have been motivated to do so in order to prevent the copying of a video signal (Ryan A – abstract and Ryan C – abstract).

42. Claims 13-15 and 33-35 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan A (US005315448A) in view of Ryan B (4631603) as applied to claims 8 and 28 above, and further in view of Kori (US005883959A).

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43. As per claims 13 and 33, in the teachings applied above, Ryan A discloses a video signal. Ryan A fails to disclose that the video signal includes color burst signals of a particular phase and that the phase of at least a portion of selected color burst signals is modified. However, Kori, another invention that protects video signals from unauthorized reproduction, discloses these features (see “modified color burst signal using phase inversion . . . should be generated” in Kori – column 13, line 62 to column 14, line 14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan A by including color burst signals of a particular phase in the vertical blanking interval in the same lines as the pseudo-sync pulses and AGC pulses exist and the modification of the phase of at least a portion of the selected color burst signals as per the teachings of Kori. One of ordinary skill in the art would have been motivated to do so in order to inhibit the copying of video signals (Ryan A – abstract and Kori – abstract).

44. As per claims 14-15 and 34-35, in the teachings applied above, Ryan A in view of Ryan B and Kori discloses the steps of arraying pseudo-sync pulses and AGC pulses and modifying the phase of at least a portion of selected color burst signals of the video signal. Ryan A in view of Ryan B and Kori performs these steps in the two following alternative manners provided in the limitations of claims 14 and 34 and claims 15 and 35 respectively:

a. for two successive lines of every 17 lines of the vertical blanking interval beginning at line 30 in field 1 and at line 301 in field 2.

b. for four successive lines of every 21 lines of the vertical blanking interval beginning at line 24 in field 1 and at line 297 in field 2.

Ryan A's disclosure that the pseudo-sync pulses and AGC pulses are placed in "the otherwise unused lines of a video signal vertical blanking interval" (Ryan A - column 1, lines 16-30) and the modification of Ryan A in view of Ryan B and Kori described in the rejection of claims 8, 13, 28, and 33 that places the color burst signals in this same region encompasses the performance of the arraying and modifying steps in the manners taught in a and b.

45. Claims 17 and 37 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan A (US005315448A) as applied to claims 16 and 36 above, and further in view of Kori (US005883959A). As per the teachings applied above, Ryan A discloses a video signal. Ryan A fails to disclose that the video signal includes color burst signals of a particular phase and that the phase of at least a portion of selected color burst signals is modified when trigger bits indicate that modification should occur. However, Kori, another invention that protects video signals from unauthorized reproduction, discloses these features (see "trigger bits '11' mean that . . . modified color burst signal using phase inversion . . . should be generated" in Kori – column 13, line 62 to column 14, line 14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ryan A by including color burst signals of a particular phase in the video signal and the modification of the phase of at least a portion of the selected color burst signals when trigger bits indicate this modification as per the

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teachings of Kori. One of ordinary skill in the art would have been motivated to do so in order to inhibit the copying of video signals (Ryan A – abstract and Kori – abstract).

Conclusion

46. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

47. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

48. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Curcio whose telephone number is 703-305-

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8887. The examiner can normally be reached on Tuesday through Friday from 7 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam, can be reached on Tuesday through Friday from 7:30 am to 4:30 pm and on alternate Mondays from 7:30 am to 4:30 pm. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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JC
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TUAN DAM
SUPERVISORY PATENT EXAMINER